

ARTIFICIAL WATERING OF LAWN GRASS

In the spring of 1927 a series of tests was laid out on turfs of Kentucky bluegrass, Chewings fescue and the Washington strain of creeping bent at the Ohio Agricultural Experiment Station, Wooster, Ohio. Watering rates consisted of unwatered plots, 50 per cent in excess of normal, 100 per cent in excess of normal and 200 per cent in excess of normal. The 36-year average yearly rainfall was used to determine normal.

Results of this experiment showed: (1) additional water was needed to keep the grass green during extended drought periods, (2) the unwatered plots started growth earlier in the spring in most of the years when observations were made, (3) water 50 per cent in excess of normal was enough to keep the grass in a green growing condition and (4) statistical analysis indicated that quantities of water above the 50-per cent rate were superfluous. In fact, results showed increases above the 50 per cent rate to be detrimental. "The greater the quantity of

water that had been applied, the poorer was the grass."

This thinning out of the desired grass species on the watered plots was apparently a reflection on root development because "with each added increment of water, there had come to be a decreased quantity of underground growth (roots and root stocks)." This fact was determined by actual measurement.

Chewings fescue was the first to show evidence of thinning out by the appearance of velvet grass *Nothololcus lanatus* (L). "In the check plots there was practically none of this grass, but in the watered plots there was high correlation between the quantity of water used and the number and size of the patches of velvet grass."

The authors were also interested in knowing: (1) when water is needed and (2) the approximate quantity required. They found that Livingston's ('15) standardized spherical black atmometer



Soil-moisture blocks buried four inches in soil under white arrows were used in irrigation studies at Michigan State College and gave good indications of moisture available to turf through readings on soil-moisture meter shown above.

indicated water needs on the basis of evaporation increments. "The results indicate that on a soil like the Wooster silt loam, grass should be maintained in a good growing condition, providing it's watered as soon after a rain as the evaporation from a black atmometer equals 320 cc of water." At each artificial watering the equivalent of one inch of

rainfall was added (623 gallons per 1,000 square feet.)

Abstract from Ecology, Vol. XV, 1934, by F. A. Whelton, J. C. Carroll and J. D. Wilson.

EDITOR'S NOTE: It should be pointed out that the atmometer referred to in this abstract measures the rate of evaporation of moisture. The evaporation rate must be correlated with the rate of water loss from any given soil type. The Bouyoucos blocks described in the article by Dr. Daniel are used to measure moisture conditions within the soil. The use of the Bouyoucos blocks therefore represents an advance in techniques for studying soil moisture.

BRIEF BUT IMPORTANT

Crabgrass control is easier to accomplish with PMAS preparations, potassium cyanate formulations and good old sodium arsenite. Newest wrinkle with sodium arsenite is to spray one pound to the acre with a good wetting agent at regular intervals of 7 to 10 days. Potassium cyanate gets mature crabgrass and goosegrass. PMAS doing excellent job on highly specialized turf; it looks as if we're closer to the "foolproof" chemical. The big interest in chemicals is to find which one is most effective for renovation and in helping to get the improved turf grasses under way. Zoysia seed has been listed by one seed firm—of foreign origin, no doubt. USGA Green Section and Department of Agriculture, cooperating, are driving hard to develop domestic production of desirable types of zoysia seed. Improved zoysias and bluegrass make a great team for superior fairways and lawns. Crabgrass loses out because it can't stand the competition. Z-52 strain of zoysia looks extremely promising from Rhode Island to California. **Bob Harlow** in GOLF WORLD writes: "Ulmer Hawkins . . . building a nine-hole course at Gainesville, Florida . . . Hawkins is having success with centipede grass which requires very little upkeep . . . never has to be mowed and presents a fine fairway surface . . ." Research to date indicates that, all reports to the contrary, centipede grass *does* need mowing for fairways and lawns. **Dr. G. W. Burton** has a centipede lawn at Tifton, Ga., and he owns a mower. Uses it, too. Pythium reared its ugly head on bent greens in

Washington and Philadelphia in late June. High temperatures and very high relative humidity preceded the attacks. No satisfactory control yet devised for Pythium. Copper dusts in light doses are suggested as best bet until pathologists find the answer. **Dr. John Cornman** and **Gene C. Nutter** are doing a great job with the New York State Turf Association. Bulletin 15 just crossed our desk. It contains good information on potassium cyanate for crabgrass control. Bulletin 14 covered the PMAS work of **Dr. DeFrance**. Don't miss **Dr. Cornman's** "Crabgrass Killers As I See Them" in Bulletin 15.

Every major city in the country may some day be faced with a serious water shortage, an official of the U. S. Geological Survey warns.

Dr. A. Nelson Sayre, chief of the Survey's groundwater branch, has told the Geological Society of Washington that United States water consumption has increased "almost unbelievably" in the last 100 years.

The per capita rate has jumped from a few gallons a day to more than 700 for every man, woman and child, he said.

Yet the government's data show the country's water resources underground are limited in any particular area, he pointed out. Wet years or dry years may cause some fluctuation, but in the long run there is no detectable change in the net amount of water available underground.